

CLAIMS

5 ^{Sub A.} 1. A catalyst for the low-temperature pyrolysis of hydrocarbon-containing polymer materials, which catalyst comprises an iron-carbon component in the form of microscopic carbon particles and ultra-dispersed iron particles, characterized in that said catalyst further comprises a metal-carbon component obtained as a product of the stripping and the pyrolysis of a dispersion that contains at least one
10 salt of metals from the group VIII in the periodic table which is capable of decay upon heating in order to form an oxide, wherein said metal is selected from the group consisting of iron, nickel and cobalt, as well as a carbohydrate and a highly volatile solvent.

15 2. A catalyst according to claim 1, characterized in that said iron-carbon and metal-carbon components are taken in the following proportions (in percent by mass):

iron-carbon component 70 - 98

metal-carbon component 2 - 30.

20 3. A catalyst according to claim 1 or 2, characterized in that said metal-carbon component is obtained as a product of the stripping and the pyrolysis of the dispersion which contains, along with said at least one salt of metals from the group VIII in the periodic table which is capable of
25 decay upon heating in order to form an oxide, wherein said metal is selected from the group consisting of iron, nickel and cobalt, said carbohydrate and said volatile solvent, also an iron-carbon component obtained previously.

30 4. A catalyst according to claim 1 or 2 or 3, characterized in that said metal-carbon component is a product of the stripping and the pyrolysis of the dispersion which contains an iron salt, a carbohydrate and a highly volatile solvent.

5. A catalyst according to claim 4, characterized in that said metal-carbon component is a product of the stripping and the pyrolysis of the dispersion which contains an iron salt, a carbohydrate selected of the group consisting of mono- and disaccharides, and a highly volatile solvent.

6. A catalyst according to claim 5, characterized in that said metal-carbon component is a product of the stripping and the pyrolysis of the dispersion which contains an iron salt, a water-soluble high-molecular carbohydrate selected of the group consisting of starch and water-soluble cellulose esters, and water as a highly volatile solvent.

7. A catalyst according to claim 6, characterized in that iron and carbon are present in said iron-carbon component in the following amounts (in mole-percent):

| | | |
|----|--------|----------------|
| 15 | iron | 1.35 - 46.15 |
| | carbon | 53.85 - 98.65. |

8. A catalyst according to claim 6, characterized in that iron and carbon are present in said metal-carbon component in the following amounts (in mole-percent):

| | | |
|----|--------|----------------|
| 20 | iron | 0.22 - 2.33 |
| | carbon | 97.67 - 99.78. |

9. A catalyst according to claim 1, characterized in that iron is present in said catalyst in the form of particles sized 50 to 8,000 Å.